

96. Family SPHAEROCERIDAE

By Stephen A. Marshall

Sphaeroceridae are a worldwide family of small, usually dull-colored flies found in abundance wherever there is decomposing organic material in which larvae develop as microbial grazers. Some species, especially cavernicolous ones, are polysaprophagous, but most species appear to be associated with decaying plants or fungi. As the common name "small dung flies" suggests, many species are associated with various kinds of feces. Species that are necrophagous, though few, are extremely abundant and are important components of the carrion-insect community.

Despite their ubiquity and abundance, sphaerocerids have little direct economic impact. They have been implicated as the major means by which nematodes are disseminated among mushroom houses (Haglund & Milne 1973), and they occasionally reach nuisance levels in food-processing plants and other buildings. As their microbe-associated habits suggest, sphaerocerids carry many pathogenic microorganisms (Greenberg 1971), but their reclusive habits preclude a major role in disease transmission. One species listed here, *Poecilosomella angulata*, has been impli-

cated in human intestinal myiasis (Micks & McKibbin 1956). Little work has been done on the importance of the sphaerocerids that abound in economically important decomposer communities such as compost and manure, but some decay cycles such as the wrack cycle (seaweed) are mediated by sphaerocerid-dominated insect communities.

Australasian/Oceanian Sphaeroceridae include 30 genera in 3 subfamilies, 2 subfamilies of which are represented by a total of 4 introduced species. Antarctic Sphaeroceridae include 5 genera, most of which cannot be placed to subfamily. The 106 recorded Australasian/Oceanian species in the Limosiniinae probably represent a small fraction of the actual fauna, and much work remains to be done on this interesting group.

Refs.: Richards (1963, rev. Micronesian spp.; 1973, Australian spp.), Tenorio (1968, biol., rev. Hawaiian spp.), Hackman (1969, family classific.), Roháček (1982-1983b, rev. European Limosiniinae, in part), Marshall & Richards (1987, rev., family classific. Nearctic spp.).

Subfamily SPHAEROCERINAE

Genus SPHAEROCERA Latreille

SPHAEROCERA Latreille, 1804: 197. Type species: *Sphaerocera curvipes* Latreille, 1805, subs. mon. Latreille, 1805: 394. [*Musca grossipes* Linnaeus, 1767 (*nomen dubium*), the only species listed, was doubtfully included in *Sphaerocera* in the original description of the genus.]
curvipes Latreille, 1805: 394. France; Australia (ACT, NSW), NZ (NZ); almost cosmopol.

Genus ISCHIOLEPTA Lioy

ISCHIOLEPTA Lioy, 1864a: 1112. Type species: *Borborus denticulatus* Meigen, 1830, mon. *ISCHIOGASTER*, error for *Ishiolepta*.
pusilla Fallén, 1820a: 8 (*Copromyza*). Sweden; NZ (NZ); almost cosmopol.

Subfamily COPROMYZINAE

Genus COPROMYZA Fallén

COPROMYZA Fallén, 1810a: 19. Type species: *Copromyza equina* Fallén, 1820, des. Zetterstedt, 1847:

2475. [*Copromyza* originally proposed without included species; Zetterstedt's designation is from the first seven included species in Fallén, 1820a: 5-8.]

TRICHIASPIS Duda, 1923a: 55. Type species: *Copromyza equina* Fallén, 1820, des. Richards, 1930: 267. *equina* Fallén, 1820a: 6. Sweden; Hawaiian Is; cosmopol.

Genus **BORBORILLUS** Duda

BORBORILLUS Duda, 1923a: 54 (*Borborus* subg.). Type species: *Borborus uncinatus* Duda, 1923, des. Richards, 1930: 267.

marginatus Adams, 1905: 198 (*Borborus*). Zimbabwe; Australia (ACT, NSW, NT, Qld, WA), Belau; Canary Is, Israel, Philippines, Africa.

sordidus Zetterstedt, 1847: 2484 (*Copromyza*). Sweden; Hawaiian Is; cosmopol. (excl. Australia, NZ). *bilineatus* Grimshaw, 1901: 75 (*Borborus*). Hawaiian Is.

Subfamily LIMOSININAE

Genus **ACUMINISETA** Duda

ACUMINISETA Duda, 1925a: 76 (*Leptocera* subg.). Type species: *Limosina pallidicornis* Villeneuve, 1916, des. Richards, 1930: 268.

cercalis Richards, 1973: 362 (*Leptocera*). Australia (NSW). **N. comb.**

flaviterga Richards, 1973: 362 (*Leptocera*). Australia (ACT); Australia (NSW). **N. comb.**

longiventris Duda, 1925a: 126 (*Leptocera*). Vietnam; Guam, Micronesia. **N. comb.**

Genus **BENTROVATA** Richards, n. stat.

BENTROVATA Richards, 1973: 394 (*Leptocera* subg.). Type species: *Leptocera regalis* Richards, 1973, mon.

regalis Richards, 1973: 395 (*Leptocera*). Australia (WA). **N. comb.**

Genus **BIROINA** Richards, n. stat.

BIROELLA Duda, 1925a: 74. Type species: *Limosina myrmecophila* Knab & Malloch, 1912, mon. [Preocc. Bolivar, 1903.]

BIROINA Richards, 1973: 330 (*Leptocera* subg.; n. n. for *Biroella*).

brevior Richards, 1973: 339 (*Leptocera*). Australia (NSW). **N. comb.**

capitalis Richards, 1973: 343 (*Leptocera*). Australia (NSW); Australia (ACT). **N. comb.**

dodo Richards, 1973: 348 (*Leptocera*). Australia (Tas). **N. comb.**

dorrignonis Richards, 1973: 333 (*Leptocera*). Australia (NSW); Australia (Qld). **N. comb.**

fuscalis Richards, 1973: 338 (*Leptocera*). Australia (NSW). **N. comb.**

hardyana Richards, 1973: 347 (*Leptocera*). Australia (NSW). **N. comb.**

meyersi Richards, 1973: 349 (*Leptocera*). NZ (NZ). **N. comb.**

myrmecophila Knab & Malloch, 1912: 236 (*Limosina*). Australia (NSW); Australia (ACT, Qld, Vic). **N. comb.**

nitidipleura Richards, 1973: 336 (*Leptocera*). Australia (NSW). **N. comb.**

percostata Richards, 1973: 342 (*Leptocera*). Australia (NSW). **N. comb.**

subsINUATA Richards, 1973: 331 (*Leptocera*). Australia (ACT); Australia (NSW, Qld). **N. comb.**

symmetrica Richards, 1973: 335 (*Leptocera*). Australia (NSW); Australia (Qld). **N. comb.**

trivittata Richards, 1973: 340 (*Leptocera*). Australia (NSW); Australia (Qld). **N. comb.**

vernalis Richards, 1973: 346 (*Leptocera*). Australia (NSW). **N. comb.**

wilsoni Richards, 1973: 343 (*Leptocera*). Australia (NSW). **N. comb.**

Genus COPROICA Rondani

HETEROPTERA Macquart, 1835: 570. Type species: *Borborus pusillus* Meigen, 1830 [misid., = *Limosina acutangula* Zetterstedt, 1847], mon. [Preocc. Rafinesque, 1814.]

COPROICA Rondani, 1861b: 10 (n. n. for *Heteroptera*).

COPROPHILA Duda, 1918: 45 (*Limosina* subg.). Type species: *Borborus vagans* Haliday, 1833, des. Spuler, 1925b: 123.

acutangula Zetterstedt, 1847: 2499 (*Limosina*). Sweden; Hawaiian Is; almost cosmopol.

ferruginata Stenhammar, 1854: 397 (*Limosina*). Sweden; Australia, Hawaiian Is, NZ (NZ), Niue, Tonga; cosmopol.

hirticula Collin, 1956: 1978. England; Australia; Japan, Europe.

hirtula Rondani, 1880: 40 (*Limosina*). Italy; Australia, Hawaiian Is, NZ (NZ), PNG (PNG), Pitcairn Is; cosmopol.

insulaepasqualis Enderlein, 1938b: 678 (*ferruginata* var.). Easter I.

insulaepaschalis. Incorr. orig. spell. of *insulaepasqualis* (Enderlein, 1938b: 678).

vagans Haliday, 1833: 178 (*Borborus*). Ireland; Australia (Qld); cosmopol.

Genus HALIDAYINA Duda

HALIDAYINA Duda, 1918: 17,32 (*Limosina* subg.). Type species: *Limosina spinipennis* Haliday, 1836, mon.

exserta Marshall, 1982: 843. USA; Hawaiian Is.

Genus HOWICKIA Richards

HOWICKIA Richards, 1973: 389. Type species: *Apterina trilineata* Hutton, 1901, orig. des.

trilineata Hutton, 1901: 93 (*Apterina*). NZ (?Auckland Is).

Genus KIMOSINA Roháček

KIMOSINA Roháček, 1983b: 115. Type species: *Limosina plumosula* Rondani, 1880, orig. des.

Subgenus ALIMOSINA Roháček

ALIMOSINA Roháček, 1983b: 120. Type species: *Borborus empiricus* Hutton, 1901, mon.

empirica Hutton, 1901: 94 (*Borborus*). NZ (NZ); Australia (ACT), Hawaiian Is [immigrant], NZ (Campbell I, NZ); cosmopol.

pectinifera Villeneuve, 1918: 334 (*Limosina*). France.

Subgenus KIMOSINA Roháček

KIMOSINA Roháček, 1983b: 122. Type species: *Limosina plumosula* Rondani, 1880, orig. des.

antipoda Roháček, 1984: 57. Australia (NSW); Australia (ACT, Vic).

longisetosa, authors, not Dahl, 1909, misid.

popularis Richards, 1973: 378 (*Leptocera*). Australia (NSW).

rennelli Harrison, 1964: 315 (*Leptocera*). NZ (Campbell I).

thomasi Harrison, 1959: 271 (*Leptocera*). NZ (Auckland Is); Australia (ACT, NSW), NZ (Campbell I).

Genus LEPTOCERA Olivier

LEPTOCERA Olivier, 1813: 489. Type species: *Leptocera nigra* Olivier, 1813 (as *Leptocora*), mon.

LOTOMYIA Lioy, 1864a: 1116. Type species: *Limosina arcuata* Macquart, 1835, des. Roháček, 1982a: 3.

PARACOLLINELLA Duda, 1923b: 166 (*Limosina* subg.). Type species: *Copromyza fontinalis* Fallén, 1826, des. Richards, 1930: 267.

SKOTTSBERGIA Enderlein, 1938b: 650. Type species: *Skottsbergia cultellipennis* Enderlein, 1938, orig. des.

LEPTOCORA, error for *Leptocera*.

- abdominiseta** Duda, 1925a: 52. Paraguay; Hawaiian Is; Argentina, Brazil, Chile, Peru, Tristan da Cunha I.
- caenosa** Rondani, 1880: 36 (*Limosina*). Italy; Australia (NSW), NZ (NZ); cosmopol.
- marginata** Adams, 1905: 200 (*Limosina*). Zimbabwe; Australia (NSW, Qld); Ethiopia.
- nigra** Olivier, 1813: 489. France; ?Australia (Qld), ?Niue, ?PNG (PNG); Palearctic Reg.
curvinervis Stenhammar, 1854: 406 (*Limosina*). Sweden.
- pararoralis** Duda, 1925a: 51. "Algonquin" [?Ontario, Canada]; Australia (NSW) [?misid.]; Chile.
- salatigae** de Meijere, 1914b: 269 (*Limosina*). Indonesia (Java); Australia (Qld), PNG (PNG); India, Nepal, Philippines, Sri Lanka, Taiwan, Vietnam.
curvinervis, authors, not Stenhammar, 1854, misid.

Subgenus RACHISPODA Lioy

- RACHISPODA** Lioy, 1864a: 1116 (as gen.). Type species: *Copromyza limosa* Fallén, 1820, mon.
- COLLINELLA** Duda, 1918: 27 (*Limosina* subg.). Type species: *Copromyza limosa* Fallén, 1820, des.
Richards, 1930: 266. [Preocc. Martens, 1871.]
- COLLINELLULA** Strand, 1928: 49 (n. n. for *Collinella*).
- COLLUTA** Strand, 1932a: 120. Type species: *Limosina zernyi* Duda, 1924, mon.
- RACHISPODINA** Enderlein, 1936: 173 (*Leptocera* subg.). Type species: *Borborus fuscipennis* Haliday, 1833, mon.
- aroana** Richards, 1973: 310. PNG (PNG).
- australiana** Duda, 1925a: 30. Australia (Qld).
- boninensis** Richards, 1963: 115. Bonin Is.
- disciseta** Richards, 1963: 166. Micronesia; Belau, Marshall Is; Malaysia (Pen).
- fuscipennis** Haliday, 1833: 138 (*Borborus*). Ireland; Australia (NSW), Guam, Hawaiian Is, NZ (NZ); cosmopol.
downesi Richards, 1944: 137. Scotland.
- macalpinei** Richards, 1973: 311. PNG (PNG).
- papuana** Richards, 1973: 308. PNG (PNG); Australia (Qld).
- pseudooctisetosa** Duda, 1925a: 27. Taiwan & Philippines & Indonesia (Java) & Australia (Qld).
- subtinctipennis** Brunetti, 1913: 174 (*Limosina*). India; Belau, Micronesia; Indonesia (Java), Taiwan, Vietnam, Africa.
- territorialis** Richards, 1973: 313. PNG (PNG); Australia (Qld).
- trifascigera** Malloch, 1928f: 326. Australia (Qld).

Genus MINILIMOSINA Roháček

- MINILIMOSINA** Roháček, 1983b: 27. Type species: *Limosina fungicola* Haliday, 1836, orig. des.

Subgenus SVARCIELLA Roháček

- SVARCIELLA** Roháček, 1983b: 30. Type species: *Limosina splendens* Duda, 1928, orig. des.
- flagrella** Roháček & Marshall, 1989: 255. PNG (Bismarck Arch).
- spinifera** Roháček & Marshall, 1989: 252. PNG (PNG).

Genus MONTEITHIANA Richards

- MONTEITHIANA** Richards, 1973: 39. Type species: *Monteithiana dealata* Richards, 1973, orig. des.
- cynthia** Richards, 1973: 394. Australia (Tas).
- dealata** Richards, 1973: 393. Australia (Tas).

Genus OPACIFRONS Duda

- OPACIFRONS** Duda, 1918: 28 (*Limosina* subg.). Type species: *Limosina coxata* Stenhammar, 1854, des.
Spuler, 1924b: 121.

PSEUDOCOLLINELLA Duda, 1923b: 166. Type species: *Limosina septentrionalis* Stenhammar, 1854, mon.

SPINOTARSELLA Richards, 1929: 173 (*Leptocera* subg.). Type species: *Limosina humida* Haliday, 1836, mon.

aequalis Grimshaw, 1901: 76 (*Limosina*). Hawaiian Is.

collessi Richards, 1973: 320 (*Leptocera*). Australia (ACT); Australia (NSW, SA, WA).

difficilis Richards, 1973: 317 (*Leptocera*). Australia (ACT).

nasalis Richards, 1973: 318 (*Leptocera*). Australia (Qld).

Genus OPALIMOSINA Roháček

OPALIMOSINA Roháček, 1983a: 137. Type species: *Limosina mirabilis* Collin, 1902, orig. des.

mirabilis Collin, 1902: 59 (*Limosina*). England; Australia (NSW), Hawaiian Is, NZ (NZ); cosmopol.

Genus OTAWAYIA Richards

OTAWAYIA Richards, 1973: 390. Type species: *Otawayia sabina* Richards, 1973, mon.

sabina Richards, 1973: 390. Australia (Vic).

Genus PACHYTARSELLA Richards, n. stat.

PACHYTARSELLA Richards, 1963: 124 (*Leptocera* subg.). Type species: *Leptocera pachypus* Richards, 1956, orig. des.

boharti Richards, 1963: 124 (*Leptocera*). Belau; Guam. N. comb.

pachypus Richards, 1956: 135 (*Leptocera*). Hawaiian Is; PNG (PNG). N. comb.

Genus PAPUELLA Richards, n. stat.

PAPUELLA Richards, 1973: 360 (*Leptocera* subg.). Type species: *Leptocera scrobifera* Richards, 1973, mon.

scrobifera Richards, 1973: 360 (*Leptocera*). PNG (PNG). N. comb.

Genus PLEUROSETA Richards, n. stat.

PLEUROSETA Richards, 1973: 355 (*Leptocera* subg.). Type species: *Leptocera wentworthi* Richards, 1973, mon.

wentworthi Richards, 1973: 355 (*Leptocera*). Australia (NSW). N. comb.

Genus POECILOSOMELLA Duda

POECILOSOMELLA Duda, 1920: 435. *Nomen nudum*.

POECILOSOMELLA Duda, 1925a: 74 (*Leptocera* subg.). Type species: *Copromyza punctipennis* Wiedemann, 1824, des. Richards, 1930: 268.

angulata Thomson, 1869: 602 (*Limosina*). Brazil; Niue, PNG (PNG); SE N. Am., S. Am., Afrotrop. Reg. [Records from Hawaiian Is are in error.]

pectiniterga Deeming, 1964: 164 (*Leptocera*). Indonesia (Irian Jaya); Australia (NSW, NT, Qld).

punctipennis Wiedemann, 1824: 59 (*Copromyza*). "India orient."; Australia (Qld), Belau, Hawaiian Is, Niue, PNG (PNG); Japan, Taiwan, Vietnam, Africa.

venalicia, Grimshaw, 1901, not Osten Sacken, 1878, misid.

Genus POPONDETTA Richards

POPONDETTA Richards, 1973: 357 (*Leptocera* subg.). Type species: *Leptocera vittigera* Richards, 1973, orig. des.

kurandensis Richards, 1973: 358 (*Leptocera*). Australia (Qld).

vittigera Richards, 1973: 357 (*Leptocera*). PNG (PNG).

Genus PTEROGRAMMA Spuler

PTEROGRAMMA Spuler, 1924a: 376 [1925a: 100] (*Leptocera* subg.). Type species: *Limosina sublugubrina* Malloch, 1912 (as *Limnosina*) [misid., = *Pterogramma substituta* Richards, 1961], orig. des.

MALLOHELLA Duda, 1925a: 75 (*Leptocera* subg.). Type species: *Limosina sublugubrina* Malloch, 1912 (as *Leptocera*), des. Richards, 1930: 268.

aestivale Richards, 1973: 368 (*Leptocera*). Australia (NSW). **N. comb.**

annectens Richards, 1964: 609 (*Leptocera*). Indonesia (Irian Jaya); PNG (PNG), Solomon Is. **N. comb.**

brevivenosum Tenorio, 1967: 425 (*Leptocera*). Hawaiian Is; "Samoa." **N. comb.**

conicum Richards, 1946: 130 (*Leptocera*). Guam; Micronesia, PNG (PNG). **N. comb.**

deemingi Richards, 1973: 367 (*Leptocera*). PNG (PNG). **N. comb.**

insulare Papp, 1972a: 101. PNG (PNG).

Genus PTEROGRAMMOIDES Papp

PTEROGRAMMOIDES Papp, 1972a: 103. Type species: *Pterogrammoides baloghi* Papp, 1972, orig. des.

baloghi Papp, 1972a: 105. PNG (PNG).

longipennis Papp, 1972a: 108. PNG (PNG).

poecilosomus Papp, 1972a: 107. PNG (PNG).

Genus PULLIMOSINA Roháček

PULLIMOSINA Roháček, 1973: 98. Type species: *Limosina heteroneura* Haliday, 1836, orig. des.

heteroneura Haliday, 1836: 331 (*Limosina*). Not given [Ireland]; Australia (ACT, NSW), Hawaiian Is [immigrant], NZ (NZ); cosmopol.

Genus SPELOBIA Spuler

SPELOBIA Spuler, 1924a: 376 [1925b: 117] (*Leptocera* subg.). Type species: *Limosina tenebrarum* Aldrich, 1897, mon.

Subgenus BIFRONSINA Roháček

BIFRONSINA Roháček, 1983b: 95. Type species: *Limosina bifrons* Stenhammar, 1854, mon.

bifrons Stenhammar, 1854: 401 (*Limosina*). Sweden; Australia, Guam, Hawaiian Is, Niue; cosmopol.

puerula Rondani, 1880: 34 (*Limosina*). Germany.

femorina Richards, 1946: 129 (*Leptocera*). Guam. **N. syn.**

Subgenus SPELOBIA Spuler

SPELOBIA Spuler, 1924a: 376 [1925b: 117] (*Leptocera* subg.). Type species: *Limosina tenebrarum* Aldrich, 1897, mon.

luteilabris Rondani, 1880: 32 (*Limosina*). Italy; NZ (NZ); cosmopol.

Genus SPINILIMOSINA Roháček

SPINILIMOSINA Roháček, 1983b: 110. Type species: *Limosina brevicostata* Duda, 1918, orig. des.

pectinata Tenorio, 1968: 187 (*Limosina*). Hawaiian Is; Japan, Nepal.

brevicostata, authors, not Duda, 1918, misid.

rufifrons Duda, 1925a: 188 (*Leptocera brevicostata* Duda var.). Taiwan; Bonin Is, Hawaiian Is, PNG (PNG).

Genus TELOMERINA Roháček

TELOMERINA Roháček, 1983b: 129. Type species: *Borborus flavipes* Meigen, 1830, orig. des. *flavipes* Meigen, 1830: 208 (*Borborus*). Not given [?Austria]; Australia (NSW), NZ (NZ); cosmopol.

Genus THORACOCOAETA Duda

THORACOCOAETA Duda, 1918: 32 (*Limosina* subg.). Type species: *Borborus zosterae* Haliday, 1833, des. Spuler, 1925b: 120.

brachystoma Stenhammar, 1854: 393 (*Limosina*). Sweden; Hawaiian Is [immigrant], New Caledonia (New Caledonia), NZ (NZ), PNG (PNG); Seychelles, Holarctic.

fittkau Remmert, 1955: 471 (*Limosina*). Egypt; ?Belau, ?Micronesia.

fucicola Richards, 1973: 326 (*Leptocera*). Australia (NSW).

peculiaris Richards, 1973: 324 (*Leptocera*). Australia (WA); Australia (NSW).

zealandica Harrison, 1959: 277 (*Leptocera*). NZ (NZ).

Genus TRACHYOPELLA Duda

TRACHYOPS Rondani, 1880: 24. Type species: *Limosina melania* Haliday, 1836, mon. [Preocc. Dallas, 1851.]

TRACHYOPELLA Duda, 1918: 15, 34 (*Limosina* subg.; n. n. for *Trachyops*).

INSULOMYIA Papp, 1972a: 109 (as gen.). Type species: *Insulomyia microps* Papp, 1972, orig. des.

atoma Rondani, 1880: 19 (*Elachisoma*). Italy; Hawaiian Is, Micronesia; Afghanistan, Azores, Madeira I, Europe.

brachystoma Papp, 1972a: 112 (*Insulomyia*). PNG (PNG).

hardyi Tenorio, 1967: 427 (*Leptocera*). Hawaiian Is.

microps Papp, 1972a: 111 (*Insulomyia*). PNG (PNG).

novaeaguineae Papp, 1972a: 114 (*Insulomyia*). PNG (PNG).

nuda Roháček & Marshall, 1986: 35. Canada; Hawaiian Is; N. Am.

obliqua, Tenorio, 1967, not Richards, 1963, misid.

obliqua Richards, 1963: 129 (*Leptocera*). Micronesia; New Caledonia (New Caledonia); Indonesia (Java, Sulawesi), Malaysia, Nepal.

Unplaced species of Limosiniinae

aucklandica Harrison, 1959: 276 (*Leptocera*). NZ (Auckland Is).

awalensis Richards, 1973: 374 (*Leptocera*). PNG (PNG).

collinella Richards, 1946: 129 (*Leptocera*). Guam; Belau.

fenestrata Richards, 1973: 379 (*Leptocera*). Australia (Qld); Australia (NSW).

knightae Harrison, 1959: 273 (*Leptocera*). NZ (NZ).

longidiscoidalis Duda, 1925a: 165 (*Leptocera*). PNG (PNG).

lutea Richards, 1963: 127 (*Leptocera*). Micronesia; Belau; Nepal, Philippines.

mediospinosa Duda, 1925a: 182 (*Limosina*). Chile; Australia (ACT, NSW, Vic), NZ (NZ); Argentina, S Africa.

tetrasticha Richards, 1973: 380 (*Leptocera*). PNG (PNG).